

Economic and Fiscal Impacts of a Proposed Coal-to-Liquids/Power Plant Facility in Musselshell County, MT.

by Scott Rickard
Center for Applied Economic Research
MSU-Billings

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Executive Summary

The proposed Bull Mountain energy project in Musselshell County, MT, has the potential to support thousands of jobs and pay millions of dollars annually in state and local taxes. The overall economic impact of this project will be determined by the final project scope. As shown in the following table, an operation consisting of coal mines and a rail link will support over 250 new jobs and pay \$2 million in annual taxes, while a facility combining mines, rail links, a 300 Megawatt power plant, and a coal-to-liquids facility could increase employment by over 4,200, produce over \$260 million in additional annual wages, and produce over \$34 million in additional state, county, or city tax revenues.

Summary Table of Total Economic and Fiscal Impacts

	Constr. (C) Ops. (O)	Mine/ Rail	Mine/ Rail/ Power Plant	Mine/ Rail/ CTL	Mine/ Rail/ Power Plant/ CTL
Output/Sales (in Millions)	C	\$155	\$435	\$451	\$1,560
	O	\$30.6	\$130	\$655	\$754
Employment (in FTEs)	C	1,948	5,934	5,796	9,985
	O	254	688	3,829	4,264
Labor Income (in Millions)	C	\$57.2	\$174	\$171	\$293
	O	\$8.0	\$31.2	\$242	\$264
State/Co./City Tax Revenues (in Millions)	C	\$6.37	\$12.3	\$12.5	\$30.1
	O	\$1.98	\$16.2	23.8	\$34.2

Introduction

This paper describes the expected economic and fiscal impacts from a proposed vertically-integrated Coal-to-Liquids (CTL) facility located in Musselshell County, Montana. This facility will include coal mines, a rail link, a CTL facility, and a coal- or liquids-fired power plant. Output impacts are estimated for the market area of Musselshell and Yellowstone Counties, Montana. Tax impacts are estimated for the market area and the state.

Assumptions

The following assumptions were used in this analysis:

Modeling Assumptions

- Construction and operations of the CTL facility can be approximated using existing IMPLAN 2.0ⁱ industry sectors.

The modeling system used for this analysis is based upon the performance of existing industries operating in the United States. Since currently CTL is not an existing industry, it was necessary to model its construction and operations as being similar to an existing industry.

- Concerning employment and output-per-worker baseline estimates, in cases where contradictory information was received, I chose to use information consistent with U.S. or Montana state averages.

Construction Assumptions:


- The 34 mile rail segment will cost \$94 millionⁱⁱ.
- The CTL facility and power plant construction will spend a total of \$490 million locally on materials and wages^{iii,iv}.

Operations Assumptions:

- The rail line will produce \$2.2 million per year in value-added^v.
- Mine output will at minimum be 12 million tons per year and employ 125 ftes^{vi}.
- The CTL facility will produce 11,000 barrels per day of output^{vii}.
- The value of the CTL operations is \$400,496,250 per year^{viii}.
- The value of coal- or liquids-fired 300 MW power plant operation is \$78.84 million per year^{ix}.

Economic and Fiscal Impacts

Economic and fiscal impacts are presented for the following possible combinations of project components:

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- Railroad Link, Coal Mine, Power Plant, and CTL facility,
 - Railroad Link, Coal Mine, and Power Plant,
 - Railroad Link, Coal Mine, and CTL facility,
 - Railroad Link and Coal Mine.

Construction Impacts

The total economic impact of construction of the combined facility is \$1.56 billion. Over \$30 million in state and local tax revenues will be paid during this period.

**Construction Impact
Mine/Rail/Power Plant/CTL Facility**

Impact Type	Direct Impact	Total Impact
Output Impact	\$1.3 billion	\$1.56 billion
Employment Impact	6,812 ftes	9,985 ftes
Labor Income Impact	\$204.7 million	\$293.9 million
Other Prop. Income Impact	\$13.6 million	\$58.3 million

**Construction Impact State/Local Taxes
Mine/Rail/Power Plant/CTL Facility**

Tax Type	Household Expenditure Taxes	Corporate Taxes	Indirect Business Taxes
Bus: Corporate Profits		\$1,207,113	
Bus: Dividends		\$2,202,740	
Bus: Motor Vehicle Licenses			\$418,728
Bus: Other Taxes			\$985,708
Bus: Property Taxes			\$14,495,833
Bus: S/L Non-Taxes			\$2,666,477
Bus: Severance Taxes			\$1,445,500
Per: Income Tax	\$4,615,829		
Per: Motor Vehicle Licenses	\$436,085		
Per: Non-Taxes (Fines, Fees...)	\$592,014		
Per: Other Taxes	\$866,712		
Per: Property Taxes	\$164,930		
Total Taxes	\$6,675,570	\$3,409,853	\$20,012,246

**Construction Impact
Mine/Rail/Power Plant Facility**

Impact Type	Direct Impact	Total Impact
Output Impact	\$290 million	\$435 million
Employment Impact	4,179 ftes	5,934 ftes
Labor Income Impact	\$124.8 million	\$173.8 million
Other Prop. Income Impact	\$6.0 million	\$31.8 million

**Construction Impact State/Local Taxes
Mine/Rail/Power Plant Facility**

Tax Type	Household Expenditure Taxes	Corporate Taxes	Indirect Business Taxes
Bus: Corporate Profits		390,770	
Bus: Dividends		713,076	
Bus: Motor Vehicle Licenses			152,267
Bus: Other Taxes			358,445
Bus: Property Taxes			5,271,295
Bus: S/L Non-Taxes			969,643
Bus: Severance Taxes			525,645
Per: Income Tax	2,729,011		
Per: Motor Vehicle Licenses	257,826		
Per: Non-Taxes (Fines, Fees...)	350,015		
Per: Other Taxes	512,425		
Per: Property Taxes	97,512		
Total Taxes	\$3,946,790	\$1,103,846	\$7,277,295

**Construction Impact
Mine/Rail/CTL Facility**

Impact Type	Direct Impact	Total Impact
Output Impact	\$290 million	\$451 million
Employment Impact	3,813 ftes	5,796 ftes
Labor Income Impact	\$115 million	\$171 million
Other Prop. Income Impact	\$9.1 million	\$36.0 million

**Construction Impact State/Local Taxes
Mine/Rail/CTL Facility**

Tax Type	Household Expenditure Taxes	Corporate Taxes	Indirect Business Taxes
Bus: Corporate Profits		443,114	
Bus: Dividends		808,594	
Bus: Motor Vehicle Licenses			154,362
Bus: Other Taxes			363,375
Bus: Property Taxes			5,343,799
Bus: S/L Non-Taxes			982,980
Bus: Severance Taxes			532,874
Per: Income Tax	2,690,406		
Per: Motor Vehicle Licenses	254,179		
Per: Non-Taxes (Fines, Fees...)	345,064		
Per: Other Taxes	505,176		
Per: Property Taxes	96,132		
Total Taxes	\$3,890,956	\$1,251,708	\$7,377,390

**Construction Impact
Mine/Rail**

Impact Type	Direct Impact	Total Impact
Output Impact	\$100 million	\$155 million
Employment Impact	1,312 ftes	1,948 ftes
Labor Income Impact	\$39.4 million	\$57.2.0 million
Other Prop. Income Impact	\$1.8 million	\$10.8 million

**Construction Impact State/Local Taxes
Mine/Rail Facility**

Tax Type	Household Expenditure Taxes	Corporate Taxes	Indirect Business Taxes
Bus: Corporate Profits		132,903	
Bus: Dividends		242,522	
Bus: Motor Vehicle Licenses			53,106
Bus: Other Taxes			125,015
Bus: Property Taxes			1,838,474
Bus: S/L Non-Taxes			338,183
Bus: Severance Taxes			183,329
Per: Income Tax	897,929		
Per: Motor Vehicle Licenses	84,833		
Per: Non-Taxes (Fines, Fees...)	115,166		
Per: Other Taxes	168,604		
Per: Property Taxes	32,084		
Total Taxes	\$1,298,616	\$2,538,109	\$2,538,109

Operational Impacts

The total value of operations of the combined facility is over \$750 million per year, with total state and local tax payments of nearly \$30 million per year.

Operations Impact Mine/Rail/Power Plant/CTL Facility

Impact Type	Direct Impact	Total Impact
Output Impact	\$500.6 million	\$754.1 million
Employment Impact	1,764 ftes	4,264 ftes
Labor Income Impact	\$194.3 million	\$264.6 million
Other Prop. Income Impact	\$35.3 million	\$76.3 million

Operations State/Local Tax Impacts Mine/Rail/Power Plant/CTL Facility

Tax Type	Household Expenditure Taxes	Corporate Taxes	Indirect Business Taxes
Bus: Corporate Profits		\$939,210	
Bus: Dividends		\$1,713,871	
Bus: Motor Vehicle Licenses			\$419,319
Bus: Other Taxes			\$987,100
Bus: Property Taxes			\$19,916,301
Bus: S/L Non-Taxes			\$2,670,242
Bus: Severance Taxes			\$1,447,541
Per: Income Tax	\$4,239,016		
Per: Motor Vehicle Licenses	\$400,464		
Per: Non-Taxes (Fines, Fees...)	\$543,702		
Per: Other Taxes	\$795,853		
Per: Property Taxes	\$151,440		
Total Taxes	\$6,130,477	\$2,653,081	\$25,440,504

**Operations Impact
Mine/Rail/Power Plant Facility**

Impact Type	Direct Impact	Total Impact
Output Impact	\$101 million	\$130 million
Employment Impact	330 ftes	688 ftes
Labor Income Impact	\$21.8 million	\$31.2 million
Other Prop. Income Impact	\$32.3 million	\$37.6 million

**Operations State/Local Tax Impacts
Mine/Rail/Power Plant Facility**

Tax Type	Household Expenditure Taxes	Corporate Taxes	Indirect Business Taxes
Bus: Corporate Profits		462,596	
Bus: Dividends		844,145	
Bus: Motor Vehicle Licenses			200,907
Bus: Other Taxes			472,947
Bus: Property Taxes			11,555,157
Bus: S/L Non-Taxes			1,279,386
Bus: Severance Taxes			693,556
Per: Income Tax	484,518		
Per: Motor Vehicle Licenses	45,777		
Per: Non-Taxes (Fines, Fees...)	62,142		
Per: Other Taxes	90,984		
Per: Property Taxes	17,314		
Total Taxes	\$700,734	\$1,306,741	\$14,201,954

**Operations Impact
Mine/Rail/CTL Facility**

Impact Type	Direct Impact	Total Impact
Output Impact	\$421.8 million	\$654.7 million
Employment Impact	1,569 ftes	3,829 ftes
Labor Income Impact	\$178 million	\$241.5 million
Other Prop. Income Impact	\$5.3 million	\$42.8 million

**Operations State/Local Tax Impacts
Mine/Rail/CTL Facility**

Tax Type	Household Expenditure Taxes	Corporate Taxes	Indirect Business Taxes
Bus: Corporate Profits		526,106	
Bus: Dividends		960,037	
Bus: Motor Vehicle Licenses			253,070
Bus: Other Taxes			595,741
Bus: Property Taxes			13,360,974
Bus: S/L Non-Taxes			1,611,562
Bus: Severance Taxes			873,629
Per: Income Tax	3,879,604		
Per: Motor Vehicle Licenses	366,507		
Per: Non-Taxes (Fines, Fees...)	497,606		
Per: Other Taxes	728,361		
Per: Property Taxes	138,596		
Total Taxes	\$5,610,675	\$1,486,143	\$16,694,977

**Operations Impact
Mine/Rail Facility**

Impact Type	Direct Impact	Total Impact
Output Impact	\$21.8 million	\$30.6 million
Employment Impact	135 ftes	254 ftes
Labor Income Impact	\$5.4 million	\$8.0 million
Other Prop. Income Impact	\$2.3 million	\$4.0 million

**Operations State/Local Tax Impacts
Mine/Rail Facility**

Tax Type	Household Expenditure Taxes	Corporate Taxes	Indirect Business Taxes
Bus: Corporate Profits		49,491	
Bus: Dividends		90,312	
Bus: Motor Vehicle Licenses			34,658
Bus: Other Taxes			81,588
Bus: Property Taxes			1,199,830
Bus: S/L Non-Taxes			220,706
Bus: Severance Taxes			119,645
Per: Income Tax	125,106		
Per: Motor Vehicle Licenses	11,820		
Per: Non-Taxes (Fines, Fees...)	16,046		
Per: Other Taxes	23,492		
Per: Property Taxes	4,470		
Total Taxes	\$180,933	\$139,803	\$1,656,427

Distribution of Impacts

Other than the direct property taxes paid by the facility owners to Musselshell County (\$14 million for the full facility), it is difficult to use hard data to estimate the percentage of economic and fiscal activity which will take place in Musselshell vs. Yellowstone county. This is because a facility of this size, dwarfing the rest of the county's economy, is likely to stimulate significant growth in businesses and industries locating close to the new facility. As the model shows, the combined facility will generate over \$200 million in additional sales in industries we already have in the market area. Previous analyses

have used 1/3rd:2/3rd or 25%:75% ratios, making Musselshell County's share of spin-off industry growth worth \$50-\$66 million in annual sales. Note that the estimated output value of all current Musselshell County businesses is \$12.5 million^x.

ⁱ Minnesota IMPLAN Group.

ⁱⁱ Correspondence with B.M. Energy.

ⁱⁱⁱ *ibid.*

^{iv} Based upon the number of industries not in the study region. Estimated based upon national averages for supplies of these facilities.

^v This is based upon 10 ftes of railroad employment in IMPLAN 2.0.

^{vi} *ibid.*

^{vii} *ibid.*

^{viii} $11,000 \text{ barrels/day} * 42 \text{ gallons/barrel} * (365 * 0.95) * \$2.50 = \$400,496,250 \text{ per year.}$

^{ix} $365 \text{ days/year} * 24 \text{ hours/day} * 300 \text{ megawatts/hour} * 1,000 \text{ kilowatts/megawatt} * \$0.05 = \$78.84 \text{ million per year.}$

^x County Business Patterns, Musselshell County, 2004.